



4. I have reviewed and am familiar with the originally-filed disclosure of the '023 Application, including the originally-filed specification, drawings and claims. I am also familiar with the currently pending claims in the '023 Application.
5. I have reviewed and am familiar with U.S. Patent 3,876,156 (hereinafter referred to as "Fukumoto '156"). I understand that Fukumoto '156 discloses a process for manufacturing foamed products of silica by subjecting a silica gel to a heat-treatment. The silica gel is formed by adding a water-insoluble inorganic powder to a silica sol, which is subsequently gelled and dried.
6. I performed, or supervised the performance of, an experiment wherein +20 mesh and -20 mesh  $\text{SiO}_2$  silica gel particles were prepared according to the method disclosed in Fukumoto '156.  $\text{Al}_2\text{O}_3$  was used as the water-insoluble inorganic powder. The gels were separately heat-treated at 1000 °C for 3 minutes and then photographed. These photographs are attached to this Declaration in Exhibit A.
7. I performed, or supervised the performance of, an experiment wherein +20 mesh and -20 mesh  $\text{SiO}_2$  pellets commercially available from Tong Yang Chemical Inc. were separately heat-treated at 1000 °C for 3 minutes. The resulting structures were then photographed. These photographs are also attached to this Declaration in Exhibit A.
8. The photographs provided in Exhibit A illustrate that the silica gel particles prepared using the  $\text{Al}_2\text{O}_3$  powder are sharp, fractured particles having an irregular shape. In contrast, the silica gel pellets that do not include  $\text{Al}_2\text{O}_3$  have a much more uniform, round appearance. It is believed that the irregular shapes and surfaces of the particles that include  $\text{Al}_2\text{O}_3$  inhibit the process of internal pore formation during a heat-treatment process compared to the more uniform particles that do not include  $\text{Al}_2\text{O}_3$ .
9. As a result of the physical differences between silica gel particles prepared using  $\text{Al}_2\text{O}_3$  powder and silica gel particles that are commercially available, I

would expect that other processing parameters, such as heat-treatment parameters, for these two different silica gels to be substantially different.

10. All statements made herein that are of my own knowledge are true. All statements made herein on information and belief are believed to be true. All statements made herein are made with the knowledge that (a) willful false statements and the like, so made, are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001, and (b) such willful false statements may jeopardize the validity of this application or any patent issuing therefrom.



June 23, 2011

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Sun-Uk Kim

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Date

# EXHIBIT A

